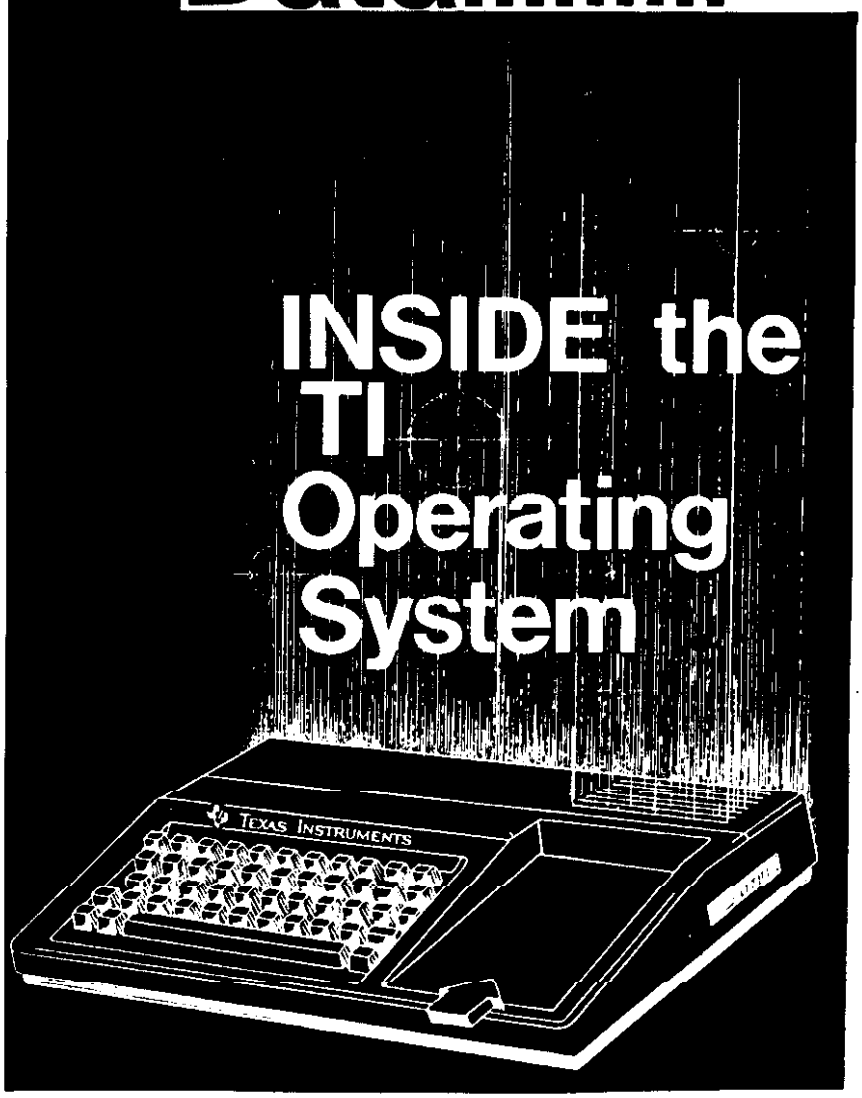
Ryte Data 1987



210 MOUNTAIN STREET
HALIBURTON, ONTARIO K0M 1S0
CANADA

Ryte Data..... NEWS REPORT

MILLENNIUM COMPUTERS

CALL FOR PRICE/AVAILABILITY OF NEW TI COMPATIBLE" MYARC COMPUTER

CANADA (705) 457-2774 U.S. SALES (713) 952-4249 9—5 Monday to Friday

The TI 99/4A has proven to be a superior machine. Its dedicated users have shown that the power and flexibility of the machine can continue to grow. Today, your 99/4A is faster, smarter and more useful than ever before.

The essential 'third party' (which made Apple and IBM successful) has come out in force for the TI 99/4A. Over the past year many new products have been introduced; products which support, expand and improve the excellent TI 99/4A design.

Full featured keyboards

Expansion systems to add full features and power to your computer. New disk drive controllers that provide more storage, faster access and up to four double sided — double density slimline disk drives.

Powerful expanded memory cards — 128k, 256k, 512k and 1024k which provide RAMDISK files, application uses and printer "spooling" functions.

Astounding Graphics RAM (GRAM) peripherals which download modules to disk or cassette, provide customized programs and add more memory to the 99/4A.

Extended Basic programming language versions which give you HIGH resolution graphics, faster operations, more memory access and advanced programming features.

Multifunction cards which combine features in one expansion slot.

Real time clock peripherals which also include printer spooler features.

A new precision input device, a "mouse," for desktop cursor control.

Home control system which operates your lights and appliances. This system can even function to monitor your heating system or act as a house security burglar alarm.

NOW your TI 99/4A is no longer "an orphan." Production of a powerful new compatible has started. Named the "Myarc 9640," this computer retains the best of your TI 99/4A with these exciting new features: 640k memory, fast operation, full sized keyboard, incredible high resolution and advanced expansion engineering. Myarc has spent over a year in developing this upgrade computer for the TI market. It will run much of the existing software and uses many of the Peripheral Expansion System cards. The first model is a "computer on a card" for the Peripheral Expansion System.

Add all of this to the fabulous software from ASGARD SOFTWARE, MILLERS GRAPHICS, GREAT LAKES SOFTWARE, INCEBOT, McCANN SOFTWARE, TECHNIGRAPHICS, DATABIOTICS, NOT POLYOPTICS, QUALITY 99 and many other companies.

Then consider the popular "shareware" software concept within the TI 'community.' These are programs that cost only the disk, mailer and postage. You receive a copy of the program and pay the author a reasonable fee for the software. In other words, try **it before you buy it!** All of these products demonstrate what an 'out of production' computer can do.

Better yet, all the information essential to developing advanced hardware and software is **now available** to all TI 99/4A owners!

Now, Believe It. Your TI 99/4A computer has more support than ever before. Subscribe to **R/D Computing** to see just exactly what we mean.

R/D COMPUTING

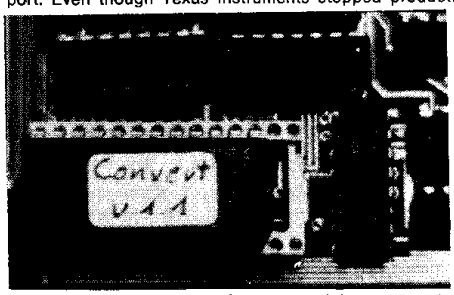
TECHNICAL PUBLICATION

We have a vision. Our vision is one of continued TI 99/4A support. We're dedicated to the power of the machine. From the novice to the experienced computer user; "R/D COMPUTING" is for you.

Published monthly in Ontario, R/D COMPUTING gives you innovative support for your TI 99/4A computer. Reviews, software programs, hardware, construction projects, technical information, new products and monthly news are all yours when you subscribe to R/D COMPUTING. TI never revealed all the important inner workings of the 99/4A. We bring you this vital information, and more, **every** month.

R/D COMPUTING is the best technical resource for your TI 99/4A. In 1986 we brought you innovative projects like video display upgrades, reset circuits, disk controller modifications and more.

You need continued support for your machine; this is the place to find it. Many TI owners are not aware of the excellent support which exists. Several companies produce hardware and software for the 99/4A. Most of the new products are more sophisticated than anything ever developed for the 4A. We feel that the TI 99/4A deserves this support. Even though Texas Instruments stopped production, the power of their computer is just now being revealed. The millions of TI computers sold had only TI to rely on — today that has all changed!



From new software to advanced hardware; the support of the TI 99/4A computer has never been better! Take advantage of these new advances, get a return on your investment and use the power inside your computer.

A major feature of R/D COMPUTING is the regular "**upgrade projects.**" These electronic construction projects are designed to give 99/4A owners more features and improvements. For example, it is possible to increase the speed of your computer with a very simple part and switch. Each month we present new circuits, diagrams and projects for your computer. In 1987 we will bring you more innovative projects: 40k cards, DSR RAM card, EPROM programmer, video display improvements and other hardware.

We publish programs Basic and Extended Basic, Assembly Language and "c" programs to give TI owners a full range of useful information.

From the moment your 1987 subscription arrives at your home, you will have access to information that makes your computer more valuable, powerful and versatile.

We believe that the TI 99/4A deserves new products, innovative hardware, software, information and a dedicated publication. THIS is what makes a computer "viable" in the fast paced microcomputer industry. Now that the 99/4A has been 'opened up,' all the secret information is available. You can have all these benefits and more each month. Subscribe now!

Read what they say:

"It is full of technical information of the highest quality."— Dr. Ron Albright, Computer Shopper.

". . . not only features inventive articles and slick programs like this one, but also have construction articles that are above par."—Texas

"Please enter my subscription for next year's subscription to your very informative newsletter."— Manitoba

"Couldn't put it down! Here's my subscription. My wish list follows."— Florida

". . . words about you in Compuserve Conference. There were some "big" names in the TI community involved. Saw your ad in Computer Shopper."— Illinois

"Gentlemen: Thank you for the fast service on my subscription to the R/D Computing Newsletter. I would like to order back issues V 1.2 — V 1.7."— Italy

"I would like to receive your wonderful newsletter for one more year."— Israel

"It's just what I've been looking for. I am glad I 'stumbled' across Ryte Data."— North Carolina

R/D COMPUTING is an international publication with subscribers in the United States, Canada, Norway, Germany, Israel, Argentina, England, Australia, Italy and South Africa.

The unique information contained in R/D COMPUTING, has proven to be invaluable to TI owners around the world. We believe that the **'inner secrets'** of the TI 99/4A contribute to the long life span of this excellent computer system. Our subscribers seem to believe the same! During the past few months, we have witnessed the development of a "hardware group" to produce even BETTER capabilities for the TI 99/4A.

Our vision is expanding to include coverage of the Myarc 9640 — the TI 99/4A compatible computer which is 'reviving' the TI community. Over the next several months we will be including information on this new system in addition to our coverage of the TI 99/4A. You will receive in-depth coverage of this important new computer system each month.

Remember, send in your subscription today in the pre-addressed postage paid reply envelope. Subscription rates for 1987 are only $16.00 per year U.S. funds or $22.00 Canadian funds with first class delivery!

TECHNICAL DRIVE

A new book by Monty Schmidt. Published in North America by Ryte Data.

"TECHNICAL DRIVE" was written to continue the release of information detailing the inner workings of the TI 99/4A operating system. If you've ever wondered exactly how peripheral devices work with the computer, TECHNICAL DRIVE will show you. If you've ever needed to write direct access software, you will appreciate the extensive coverage. This book contains over 150 pages of in-depth information on the DSR "Device Service Routine" peripheral interface used to connect a wide range of devices to the computer.

The first section discusses CRU "Communications Register Unit" designations and the DSRLNK found in the MiniMemory Command Module. The fully commented source code reveals how the DSR's are accessed, providing an overview of how the TI 99/4A communicates with external devices.

Covered in TECHNICAL DRIVE is the TI Disk Controller Card with fully commented source code, disk format, directory link, file descriptor records, VDP memory map, the seven low level routines PLUS example programs on how to interface these with built-in routines.

The TI RS-232 is covered in the same detail. Extensive commented code showing how the card functions, reading of the timing byte in the console operating system and information on how to access the RS-232 card directly within your own assembly programs is included in this publication.

Source code and information on the CorComp 9900 Clock Peripheral is documented in the book for owners of the Triple Tech Clock Card and the Stand-Alone Clock. This section contains details showing how the power up routines work with more program examples to access the internal programming of this device.

This book is one of a series of in-depth technical information. TI 99/4A owners will appreciate the extensive commentary and the clear explanations of the 'inner secrets' of their computers. John Clulow considers Technical Drive to be one of the most important books published on the 99/4A to date. Order your copy now!

TECHNICAL DRIVE is available for $17.00 plus $2.00 shipping (US funds) or $23.00 plus $2.00 shipping (CDN funds). User group orders of three or more books will receive a 10% discount.

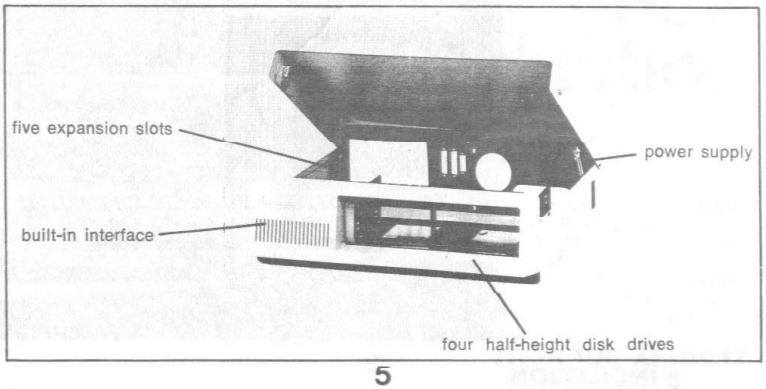
99AT Expansion System

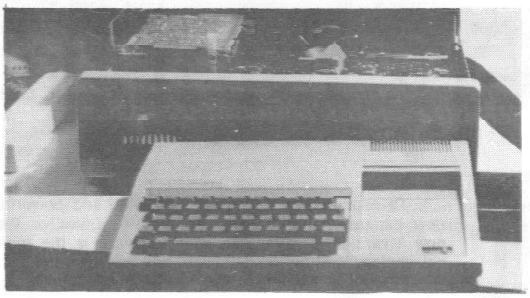
To expand your computer system to add powerful new expansion cards, upgrade to disk drives or the new Myarc 9640 computer, this hardware is the logical choice. We reviewed the options and decided that this product is needed in the TI 99/4A community.

Our 99AT expansion project is designed to provide:

- full featured expansion for the TI 99/4A computer
- larger power supply: 135 watts, 150 watts or 200 watts
- lower cost expansion system with more features than any other system
- up to four half-height disk drives including hard disks in the system: or any combination thereof (limited only by power supply rating)
- five expansion slots for standard TI size: TI, Myarc, CorComp, Horizon, Foundation, Mechatronic, Atronic and MBP expansion cards
- built-in interface: all five slots are useable
- smaller round connector cable (optional feature for 99/4A systems)
- contemporary design and future upgrade options
- support for the Myarc 9640 Computer System.

The 99AT project was designed by Pat Saturn of MicroStuph & Microart of Toronto and implimented through Millennium Computers. For full expansion capability; new peripheral cards, disk drives and the new Myarc computer system . . . the 99AT expansion unit is the ONLY expansion choice. To receive yours, simply send us your order via



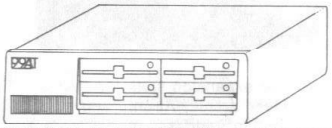


cheque, money order or MasterCard. Please include your phone number. Your "99AT Expansion Unit" will be shipped according to orders received. Initial production runs are limited — **reserve yours now!**

$210.00 CDN funds or $155.00 U.S. funds with the following options: 135 watt power supply with cooling fan, built-in system interface, card mounting hardware and four drive front panel in a flip-top case.

$230.00 CDN funds or $165.00 U.S. funds for the above configuration with 99/4A interface cable set installed.

Call for prices on larger power supplies or other options. Add $10.00 U.S. funds or $13.50 CDN funds shipping for each unit.



ENHANCED GPL Assembler V2.1

NØW with high memory loader package

UNLOCK ALL THE SECRETS! New GPL Assembler Version 2.1 available exclusively through Ryte Data.

This program provides the power to write, edit and assemble true GPL programs for the TI 99/4A. Create code that accesses console operating system routines directly. Develop programs that use the GPL Interpreter and all the features of the TI 99/4A.

One of TI's major secrets was the GPL interpreter contained on GROM chips in the 99/4A console. This internal code, "Monitor" and the operating system, was never documented. Many of TI's routines, programs, languages and command modules are written in this "Graphics Programming Language."

NOW THIS 'HIDDEN CODE' IS REVEALED IN FULL!

It is now possible to write your own 'modules' or update GPL modules (with the new hardware devices such as Maximem and GramKracker which are now available), modify disk based programs written in GPL and create working GPL programs such as Myarc's new Disk Manager III program. You can even modify the TI 99/4A operating system! New hardware devices will be available to take full advantage of this important software package.

This package includes the GPL Assembler disk, printed documentation, GPL tips and hints, update support service and commented GROM/ROM listings (with the book "INTERN"). An example for a command module type GPL program is included with source, object and list files on disk.

Requires: 32k memory, disk drive(s), TI Editor Assembler package. Printer/RS-232 recommended. ~~Price: $59.95~~

now $49.95
w/Linker $59.95

GPL price Reduction

Run Time Version

NEW FROM MONTY SCHMIDT: **GPL LINKER V1.1**

GPL Linker is an ingenious program that places the power of Graphics Language Programming (GPL) at your command. No extra hardware is required beyond standard 32k and disk system. In short, Linker creates runnable program files from compressed (or uncompressed) GPL Assembler object files. You can then run these programs with "Option 5 Run Program Files" of the Editor Assembler Module.

Up to 24k GPL programs can be developed and run on standard 32k systems. Included in the run time version are two demonstration programs and "CONVERT," a public domain conversion program that converts MS BASIC statements to TI BASIC statements.

Price: $21.00 CDN funds $15.00 US funds.

Super Clock Support

Designed for the CorComp Clock Peripheral—Triple Tech Card or Stand-alone models. This utility package provides more functions for use in your Extended Basic programs. Direct access to the clock ROM at assembly speed gives you these features: three independent timers to set and read; alarm function; two interrupt routines to display time and date on screen with CTRL T—continuously or on your command; all time and date displays are in 12 or 24 hour format using **TEXT.** This program also allows the week, date and time to be set independently rather than all together.

Program disk is not copy protected to allow you full use in your Extended Basic programs. Package includes disk and instructions. Only $17.95 plus $2

BASIC Compiler V1.1

New Basic Compiler that is finally easy to use! Supports virtually all Basic and Extended Basic commands in existing programs. Simply load and compile programs from a menu driven directory on your screen. No extensive re-writing, variable declarations or conversions are required. Compiler produces code-list in one pass containing all variable addresses and jump list. Package includes Extended Basic Loader, Floating Point Loader, Integer Loader, Disk Menu program and DSR program for the Compiler support. This Compiler cannot unravel DEF statements and stops on the END statement—no SUB's allowed. TRACE, BREAK, ON ERROR, CALL LOAD and CALL LINK may produce execution errors. Requires 32k, disk. Price: $20.00 plus $2 shipping (US funds).

80 Track TI DISK CONTROLLER EPROM SET

TEMPORARILY CANCELLED

The TI Disk Controller is capable of supporting up to three double-sided single density (DS/SD) disk drives. The total number of available sectors is 720 per disk.

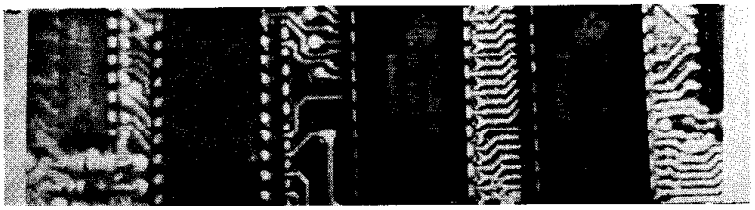
Disk Manager II from Texas Instruments was designed to support anything from 35 track drives, single-sided single-density ALL THE WAY up to 80 tracks per side @ double-density! This last option was designed into the DMII software to provide an upgrade path to true QUAD density data storage. TI had designed a controller capable to supporting four double-sided double-density (DS/DD) 40 track or (DS/QD) 77 track disk drives — to achieve a maximum of 630,784 bytes or 2464 sectors per disk.

Obviously, TI did not release this new disk controller. The alternative is to purchase a CorComp or Myarc disk controller — or update the existing TI disk drive controller.

With this pair of EPROMs which contain updated controller software, you can now support 80 track disk drives and achieve 1440 sectors per disk. This EPROM set will **effectively** provide 'double-density' operation by using a "QUAD" density disk drive.

1. The EPROM set is installed in the TI Disk Controller Card for the Peripheral Expansion Box. You must remove the existing PROMs.
2. ALL other operations remain IDENTICAL. You can mix drives and formats i.e. one original 40 track drive and one or two 80 track drives.
3. Disk Manager II from TI must be used to initialize the disks. Other disk manager programs will support the usual operations, but not initializing disks for 80 track.

3a. Monty Schmidt has written a new Command DOS which will be able to support this new format and other new features for the TI 99/4A. See page 10 for details.



4. The data is written on twice as many tracks. Therefore it is NOT compatible with other disk formats i.e.: Myarc or CorComp double density. (This has not yet been tested on a Myarc QUAD density controller.) It DOES remain compatible with the STANDARD format (SS/SD — DS/SD). Other controllers will read two tracks at once on the NEW format and produce read errors. Once a disk is formatted to 720 sectors per SIDE, it must be used in the same type of drive.
5. Half height 80 track drives are used to achieve the increase in storage capacity. These 80 track drives are listed as 96 tracks per inch (tpi) or as QUAD density. These are advertised in Computer Shopper for $69.00 US funds.

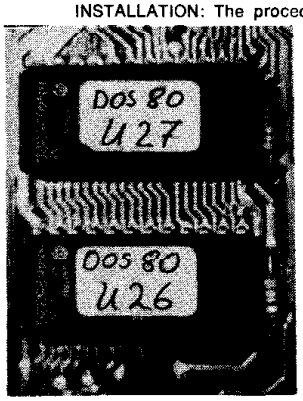
5a. You will, of course, be able to use these 80 track drives with the Myarc disk controller with the QUAD density option installed . . . the same with any 40 track drives you already have.

6. Either two half-height drives (one 40 track and the other 80 track) can be installed in the PE Box. A separate disk drive case and power supply is another alternative.
7. This EPROM set has been tested with all these major software packages: TI Writer, MultiPlan, Extended Basic, Editor Assembler, etc.

This does not quarantee that it is fully compatible with ALL software available. Particular problems could possibly arise with software which access the controller on a direct level.

TEMPORARILY CANCELLED

INSTALLATION: The procedure to install these two EPROMs is very simple. De-solder the existing PROMs in the TI Disk Controller — U26 and U27. A de-soldering tool is essential. Solder in the two sockets (which we provide with every kit). Plug in the two EPROMs — notch UP with pin #1 in the upper left corner same as all other chips on the board. That's all there is to it!



Then re-assemble your system, adding the 80 track drive, etc. and start using 1440 sectors per disk.

You can even start by continuing to use your existing drive while you order your new 80 track drive. Be sure and get a dual drive CABLE (or a longer cable for a drive cabinet) and the proper wiring harness to hook up two or more drives.

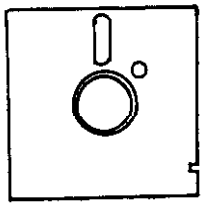
It is NOT recommended that you use two full power drives from the PE Box power supply. Plans for upgrading the PEB supply or using other power supply options for two or more drives have been published by Ryte Data and others.

If you have further questions: call 1 (705) 457-2774 weekdays 9 to 5.

PRICE: The bottom line is $45.00 US funds or $60.00 CDN funds for the TI DDC PROM-SET. Package includes the two EPROMs programmed with the 80 track software; two low profile sockets for installation; full documentation with photos and diagrams plus a 60 day guarantee on parts and labour (if performed in our shop).

Personal cheque, money order or MasterCard. Immediate delivery upon receipt of order. We can accommodate owners who wish to have the installation done for their disk controller card. Call for details.

Command D.O.S.



new by Monty Schmidt

The final word. Command DOS is a totally unique program in the 99/4A world. Command DOS gives you the power of several utilities in one powerful package. This program gives you more control over your computer.

From power up you can auto-execute a set of "batch" files where the computer automatically performs a series of tasks. Command DOS will allow you to format, copy, delete, protect, erase and diskcopy. You can "type" (list) files to your screen and/or printer. From Command DOS you can load and run program image and D/F files, execute batch files, directory your disks, search the REF/DEF table and more.

Command DOS will also load TI Writer to use as an editor — in 40 or 80 column mode! What's more, special commands provide utility programs: such as CHECKDISK, COMPARE, FORMAT and EDIT40 which then exit back to Command DOS. You'll find that the 34 new prompt line commands provide great flexibility and power.

Command DOS will format disks in the 80 track format required for the TI Disk Controller EPROM set. This feature gives you a total package with more power and features than Disk Manager II from Texas Instruments. See page 8.

If you are a serious 99/4A user, Command DOS will provide a new operating system environment which builds on the existing TI operating system.

In fact, if you are considering a Myarc 9640 or are already using MS-DOS at work, your TI will give you the features of that operating system. The transition is powerful, seamless and logical.

NOTE: Command DOS does not use up the usual memory areas. Another great feature of Command DOS is that it loads into the memory space >6000 to >7FFF. The first disk based version requires a GRAMKRACKER, Super Space module, Maximem, GRAM Card, Cache Card or 8k RAM E/A module.

Command DOS

© 1986 by MONTY SCHMIDT

Ryte Data

210 MOUNTAIN STREET
HALIBURTON, ONTARIO K0M 1S0
705 457-2774

Price: $29.95 US funds or $39.95 CDN funds includes two disk packages with command descriptions and printed documentation on using Command DOS.

A sufficient number of requests will allow us to produce a module based version of Command DOS. Owners without any of the above hardware devices will be able to use Command DOS. Write **today.**

COMMANDS:

- BATCH
- BEEP
- CLS
- COPY
- DEL
- DIR
- DISKNAME
- ECHO
- ERASE
- FIX80
- SEE
- HELP
- HONK
- INIT
- LINK
- LOAD
- MORE
- ONKEY
- OUTPUT
- P? (printer)
- PRINT
- PROTECT
- Q (quit)
- REF
- REM
- RENAME
- SETPRINT
- TYPE
- UNPROTECT
- VER
- VOL
- WAIT
- WIDTH
- X (execute)
- • FORMAT
- • DISKCOPY
- • CHKOSK
- • CMPOSK
- • EDIT40
- • AUTO-BAT